

COMMENTS ON THE SUMMARY OF CLIMATIC ANALOGIES BETWEEN
SOVIET AND NORTH AMERICAN GRAIN-GROWING AREAS BY [REDACTED]

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In the accompanying "Summary," [REDACTED] presents the conclusions to his earlier studies of the major grain-growing areas in the USSR. He compares these areas with the nearest climatically analogous areas in the United States and Canada on the basis of relative acreages and yields. On the basis of this comparison, [REDACTED] presents estimates 25X1A9a of yield increases for Soviet grain production by region in terms of percentages.

Despite the fairly specific estimates, the study has certain inherent limitations that detract from its value. The most obvious limitation is that the climatic areas within the United States and Canada are not completely analogous to those in the Soviet Union. As 25X1A9a [REDACTED] points out, the distribution of rainfall in most of the Soviet Union tends to be less favorable than in the North American areas selected as climatic analogues, particularly during the growing season. Even between the apparently analogous areas, disparities in grain yields occur. In such cases, it is possible that certain critical climatic factors are not reflected in the average precipitation and temperature data which [REDACTED] used as the basis for the 25X1A9a establishment of the analogous areas.

Critical climatic factors worthy of further examination are (1) the frequency and intensity of droughts, (2) the frequency of aperiodic killing frosts during the growing season, and (3) the frequency of periods of excessive moisture that prevent cultivation

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or cause grain kill. Information on the frequency and intensity of drought is most needed, particularly for evaluating data on average yield in areas where rainfall tends to be marginal. The probability of drought in relation to yields of spring grains has been worked out for the central part of European USSR (Klimaticheskiye Resursy Tsentral'nykh Oblastey Yevropeyskoy Chasti SSSR i Ispol'zovaniye ikh v Sel'skokhozyaystvennom Proizvodstve, edited by Gol'tsberg, I. A. and Drozdova, O. A., Leningrad, 1956, pp. 167-172). Drought of intensity sufficient to lower spring-wheat yields 25 percent or more are probable 2 years out of every 10 in the southeastern part of European USSR southeast of a line roughly connecting Kishinev, Kirovograd, Kazan' and Ufa. In the area southeast of a line passing through eastern Rostov Oblast and the cities of Saratov, Kuybyshev, and Orenburg (Chkalov), drought is more frequent, being probable 4 years in every 10. In the southern Ukraine and northern Crimea, there is another smaller area where the drought expectancy is 4 years out of 10.

In the summary table of climatic analogies, [REDACTED] estimates 25X1A9a the potential changes in yields on the basis of 1938 acreages. Unfortunately, the use of 1938 data on acreages is confusing and may even be misleading. First, the boundaries of administrative regions differ from those of today. If [REDACTED] has adjusted acreages to 25X1A9a conform with present-day boundaries, he gives no indication of it in the text. Furthermore, boundary changes would require corresponding adjustment of climatic data. The present-day administrative divisions may encompass areas that are climatically considerably more or

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considerably less favorable to agriculture than was the case in 1938. Such differences would have direct bearing on the estimates of yield increases.

Acres as of 1954 or 1955 would have provided a better basis for estimating yield increases since the 1954-55 boundaries conform reasonably well with those of the present.

A small-scale orientation map would be a valuable asset to the summary; possibly the author intends to supply one. A map is particularly important since the regional breakdown used does not coincide with current Soviet statistical reporting districts or territorial-administrative divisions. From the summary alone, it is impossible to discover what areas are included in some regions discussed, such as "European West," "European Northwest," and the various Areas within the Ukraine.

The estimates of yield increases for the European Northwest and the adjacent Kalinin and Velikiye Luki Oblasts appear to be too high. It is open to question whether these areas would be as favorable as central Minnesota or even the Soviet Central Industrial region. The European Northwest has a shorter season with temperatures exceeding 15° Centigrade, and average monthly temperatures are about two degrees lower throughout the growing season. Furthermore, the terrain of the European Northwest is very poorly drained and may be excessively moist during much of the growing season. Consequently, it is doubtful whether the yield increase for the European Northwest would exceed 25 percent.

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